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APPARATUS FOR MIXING A CHEMICAL MEDIUM WITH A PULP SUSPENSION  
FIELD OF THE INVENTION

[0001] The present invention relates to an apparatus for mixing of a chemical medium in gas gaseous or liquid state with a pulp suspension.

BACKGROUND OF THE INVENTION

[0002] In the treatment of pulp suspensions there is a need for intermixture of different media for treatment, for example for heating or bleaching purposes. Therefore it is desirable to disperse the medium in the pulp suspension during simultaneous conveyance of the pulp suspension through a pipe. European Patent No. 664,150 discloses apparatus for this function. For heating of pulp suspensions, steam is added which condenses and thus gives off its energy content to the pulp suspension. A bleaching agent is added during bleaching that reacts with the pulp suspension. In connection with the treatment of recovered fiber pulp printing ink is separated by flotation, which means that air must previously be disintegrated in the pulp suspension such that the hydrophobic ink, or the printing ink, may attach to the rising air bubbles. In this connection it is desirable that the medium for treatment, e.g. air, is evenly and homogeneously distributed in the pulp suspension, preferably with tiny bubbles to achieve a large surface against the pulp suspension.

[0003] In all cases it is difficult, with proportionately low addition of energy, to achieve an even intermixture of the medium in the flow of material. When heating pulp suspensions by the supply of steam to a pulp pipe, problems often arise with large steam bubbles that are formed on the inside of the pipe, and this as a consequence of a non-disintegrated gas with a small condensation surface. When these large steam bubbles rapidly implode, condensation forces arise that cause